



Chapter 3.17  
**Health and Safety**

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## **3.17 Health and Safety**

### ***3.17.1 Introduction***

This section describes the primary health issues associated with water resources in the project region, and assesses potential health and safety effects resulting from the proposed project.

### ***3.17.2 Description of Area of Influence***

Doña Ana County, New Mexico, and El Paso County, Texas, comprise the area of influence, region of impact, or project area, for potential health and safety impacts. This multi-county area was determined to be the impact region because the residents within these two counties are potentially the most likely to be affected by the construction and operation of the proposed new and expanded WTPs and associated facilities.

### ***3.17.3 Affected Environment***

The City of El Paso obtains its water from three sources: the Rio Grande, the Hueco Bolson, and the Mesilla Bolson (Canutillo wells). About 40 percent of the City's water comes from the Hueco Bolson, which contains both potable fresh water and a considerable amount of brackish water.

The Mesilla Bolson is an underground water supply located in Texas, New Mexico, and Chihuahua, Mexico. The drinking water supply from the river is not a reliable one, because of periodic poor water quality, prolonged droughts, and periods of non-release from Elephant Butte and Caballo Reservoirs for several months during the secondary irrigation season, and for brief periods during the primary irrigation season (City of El Paso 1988).

Outside the City of El Paso, water problems of a serious magnitude have occurred. Lack of potable water or poor water quality is the most serious problem, contributing to health problems such as waterborne illnesses. Between 1978 and 1985, the rates for Hepatitis (a viral illness affecting the liver) and Shigella dysentery (a bacterial illness) in El Paso County outside the city were roughly 3 to 4 times the national rate (City of El Paso 1988). These illnesses can be contracted through untreated and contaminated water.

A large portion of the population in El Paso County outside the city limits does not have adequate water facilities. For example, in 1987, more than 28,000 county residents did not have adequate potable water resources available (City of El Paso 1988).

Other public health problems also exist in the low-income areas in the Lower Valley outside El Paso's city limits. These include poor access to health professionals, low levels of awareness about family health maintenance, and undesirable environmental circumstances (Parkhill, Smith and Cooper, Inc. and CH2M HILL 1997).

Most of the water needs from approximately Mesquite to Sunland Park, New Mexico, are met by private wells. A few mutual consumer water associations exist, and the larger communities have public water systems. Water quality in the region is considered generally good. The quality of water for residences with independent wells varies depending on depth (Doña Ana County Planning Division 1992).

Some of the wells in Doña Ana County have water quality problems because of nitrate concentrations that exist from improper installation and maintenance of septic tanks. Although regulations exist to dictate the design and installation of tanks and fields, several factors can impede the protection of human health:

- The number of agencies and regulations
- Limited support of agencies in numbers of staff, language barriers, and distance to offices
- Lack of residents' understanding of environmental and health consequences of certain behaviors, such as not emptying the tank or using harsh chemicals
- Economic constraints

In 1990, the New Mexico border region had a Hepatitis A rate and a Shigellosis rate about two to four times higher than

the national average (National Center for Health Statistics, Centers for Disease Control and Prevention 1990). As indicated for El Paso County, these illnesses can be contracted through untreated and contaminated water.

Table 3.17-1 lists both the population served by a community water system in El Paso and Doña Ana Counties that had one or more health-based violations of EPA standards between 1991 and 1998, and also the number of community water systems with one or more health-based violations in those two counties during that period.

### ***3.17.4 Environmental Consequences and Mitigation***

This section discusses potential impacts on the health and safety of the region's population, specifically addressing the following questions:

1. Would construction of proposed project features pose a greater than average risk of accidents occurring during the project construction period?
2. What would be the consequences of a proposed project pipeline failure?
3. What would be the consequences of implementing the No Action Alternative on public health?

These project-related issues are discussed below, following the discussion of expected trends and future conditions under the No Action Alternative.

#### **3.17.4.1 Issues Eliminated from Further Analysis**

Health and safety issues related to water resources, water quality, pipeline failure,

**TABLE 3.17-1**  
Health-Based Violations of Community Water Systems in El Paso and Doña Ana Counties

<b>Population Served by Community Water Systems in Violation of EPA Standards in El Paso County</b>		<b>Population Served by Community Water Systems in Violation of EPA Standards in Doña Ana County</b>	
<b>Year</b>	<b>Population Served</b>	<b>Year</b>	<b>Population Served</b>
1991	29,000	1991	2,275
1992	8,700	1992	6,100
1993	3,000	1993	1,500
1994	4,000	1994	1,525
1995	27,500	1995	1,900
1996	8,800	1996	600
1997	NA	1997	100
1998	1,200	1998	2,800

  

<b>Number of Community Water Systems with one or more Health-Based Violations in El Paso County</b>		<b>Number of Community Water Systems with one or more Health-Based Violations in Doña Ana County</b>	
<b>Year</b>	<b>Number of Systems</b>	<b>Year</b>	<b>Number of Systems</b>
1991	4	1991	6
1992	6	1992	3
1993	1	1993	6
1994	4	1994	3
1995	2	1995	5
1996	3	1996	3
1997	NA	1997	2
1998	2	1998	6

Source: Safe Drinking Water Information System 1999.  
NA = Data not available

and proposed facility operation were determined to be applicable to the proposed project. Therefore, the health and safety impact evaluation does not include a discussion of potential impacts not related to those issues.

### 3.17.4.2 Issues Addressed in the Impact Analysis

No health and safety issues were identified at the project's public scoping meetings, which were held in September 1998.

### 3.17.4.3 No Action Alternative

For the No Action Alternative, the primary health and safety issues would be related to the expected reduced water supply in year 2025, specifically the associated potential public health effects from a reduced supply, or the increased cost of the supply.

The fundamental objective of the project, to ensure a high quality, sustainable water supply for the El Paso–Las Cruces region of west Texas and southern New Mexico,

would not be met if the No Action Alternative is implemented.

The population of the El Paso–Las Cruces region is growing rapidly. Some population projections indicate that the region’s population will nearly triple by year 2025. The population is currently relying heavily on groundwater supplies to support the existing population. However, some fresh ground water resources are expected to be depleted by year 2025. Continued mining of the limited available fresh ground water will reduce supplies. Present treatment capacity of surface water supplies from the Rio Grande will not support future population growth. The price of water also would likely increase, as demand for it increases and its supply decreases. The lack of an adequate, reasonably priced water supply could create a public health hazard.

It is likely that as population density increases and available water supply diminishes, the overall public health will decline. Sanitation levels in areas that are not served by public water and wastewater systems will decline, which would increase the potential for waterborne illness and other illnesses to occur. Implementation of the proposed project may reverse this trend by providing treated water supplies to residents currently using groundwater resources.

It is likely that the segment of the population most affected would be minority or low-income people who could not afford to relocate to an area that is served by public water and wastewater systems. Minority or low-income people who live in an area served by public water and wastewater systems may not be able to afford the water that is available. Increases in occurrences of illness in this segment of the population would require social

services to provide a safe, reliable water supply and adequate health care for those who are ill. Bilingual education programs may be required to educate the public on water conservation measures, maintenance of septic systems, and hygiene. This expected increase in the requirement for social services may tax the existing system. The impact on public health would be significant.

#### **3.17.4.4 Project Construction**

Construction methods would not differ among the five action alternatives; therefore, the following discussion is applicable to all action alternatives. During the construction phase, primary safety concerns would be for project construction workers; potential pedestrian safety issues from increased traffic on roadways, where conflicts between construction traffic and children entering and exiting school buses on roadways are part of bus routes; and the potential for increased hazards from roadway damage because of additional heavy truck traffic during project construction.

Construction of the proposed project would not pose a greater than average risk of accidents occurring during the project construction period for several reasons, as listed in the text that follows.

Standard construction methods and practices are expected to be used to construct the WTPs, aqueducts, and ASR field. The construction contractors will comply with all applicable federal, state, and local regulations regarding worker safety and health. All required permits, including, but not limited to, those that regulate land disturbance; dewatering activities; construction near or within waterbodies and wetlands; the disposal of construction waste or water; and the

transport, storage, use, and disposal of chemicals, solvents, fuels, and other materials, will be obtained and all permit conditions will be adhered to. To the extent possible, permit conditions will be incorporated into construction specifications. Construction crews will be informed of permit requirements and penalties for noncompliance.

In addition, coordination with utility companies will occur to determine the specific locations of existing utility lines and facilities relative to proposed project facilities. Construction crews will be trained regarding protocols to follow in the event that a previously unidentified utility facility is encountered during project construction. This will minimize potential conflicts between project facilities and existing utilities, and will reduce the risk to construction crews and the public from accidents.

A traffic management plan will be prepared for project construction that will include provisions for controlling traffic movement through construction zones: providing posted detour routes if necessary; developing and implementing traffic protocols for project travel on roadways (including ingress, egress, and turning and backup movements); posting construction vehicle speed limit signs on the affected roadways; and informing project truck drivers of the potential for children to be present along roadways that comprise the project truck routes. In addition, materials suppliers for construction activities and operation of project facilities will be licensed to transport the required materials.

Several of the roadways that would lead to proposed project facilities are two-lane rural roads, and they may not have been designed to accommodate repeated heavy

truck traffic that would occur during project construction. If project construction traffic causes damage to a roadway, depending on the type of damage, it could cause a public safety hazard to other motorists, bicyclists, or pedestrians on the roadway. Damage from project construction traffic to roadways that comprise the project routes will be repaired immediately if it would result in a public safety hazard, or funding for such repairs will be provided. The roads will be repaired to a standard that is comparable to their existing conditions.

The addition of project truck traffic on rural roads may cause a public safety hazard to children who travel on school buses. Because some of the rural roads are narrow and are school bus routes without bus pull-outs, buses have to stop in the roadway and children have to stand on the edge of the roadway while waiting for buses. To minimize the potential safety impact on children being picked up or dropped off by school buses, an evaluation of roadways that comprise the project truck routes would be conducted to determine if the roads are part of school bus routes. If they are, alternate roads would be identified to avoid potential accidents. If alternate routes cannot be identified, to the extent feasible, time restrictions for project trucks would be implemented along the school bus routes. This will prohibit project truck traffic on those roads at times when school children are being picked up or dropped off.

#### **3.17.4.5 Project Operation**

During project operation, the primary health and safety concerns would be breakdown of a project facility, pipeline failure, or potential chemical spills at a project facility. The WTPs have in-house contingency plans that address measures to

be taken in the event of equipment failures, accidents, or chemical spills. Operations personnel are trained regarding the appropriate corrective actions to be taken in the event of an emergency, including chemical containment, cleanup, disposal, and notification.

Operation and maintenance personnel will periodically inspect project facilities, including pipelines, for signs of problems. Repairs will be performed as soon as possible. If a pipeline fails, operation and maintenance personnel will take action as soon as possible to correct the problem and to notify the affected community. While repairs are being performed, water will be made available by alternate means. Pipeline failure is not expected to be a frequent occurrence, and temporary measures could be implemented to ensure short-term delivery of a water supply to affected customers.

#### **3.17.4.6 Unavoidable Adverse Impacts**

No significant unavoidable adverse impacts on health and safety are expected from implementation of the proposed project under any of the action alternatives.

#### **3.17.4.7 Cumulative Impacts**

No adverse health and safety impacts are expected to occur.